WHAT IS CLAIMED IS:

1. A semiconductor device comprising:

a semiconductor substrate; and

a storage capacitor formed on a main surface side of the semiconductor substrate and being provided with a first electrode, a second electrode and a capacitor insulation film arranged between said first and second electrodes,

wherein the main element of a material comprising at least one of the first electrode and the second electrode is selected from a group consisting of ruthenium, platinum and iridium; and

wherein a material comprising at least one of the first and second electrodes includes at least one type of element selected from a group consisting of palladium, titanium, nickel and cobalt.

2. The semiconductor device according to claim 1, wherein a sum content of the selected elements is not less than 0.14 but not more than 25 at. %.

3. A semiconductor device comprising:

a silicon substrate;

a storage capacitor formed on a main surface side of the silicon substrate and being provided with an upper electrode and a lower electrode arranged so as to have a capacitor insulation film between them;

a wiring conductor formed on the main surface side of the silicon substrate and including copper (Cu) as the main element; and

a barrier metal provided so as to contact with a surface of the wiring conductor,

wherein the main element of a material comprising the barrier metal is the same as the main element of a material comprising the upper electrode and/or the lower electrode;

wherein said element of the material comprising the upper electrode and/or the lower electrode is selected from a group consisting of ruthenium, platinum and iridium; and

wherein said material comprising the upper electrode and/or the lower electrode includes at least one type of element selected from a group consisting of palladium, titanium, nickel and cobalt.

4. A semiconductor device comprising:

a semiconductor substrate;

a storage capacitor formed on a main surface side of the semiconductor substrate and being provided with an upper electrode and a lower electrode arranged to have a capacitor insulation film between them;

a wiring conductor formed on the main surface side of the semiconductor substrate and including copper (Cu) as the main element; and

a barrier metal provided so as to contact with a surface of the wiring conductor,

wherein the upper electrode extends over an area in which the opposing lower electrode exists;

wherein the main element of a material comprising the barrier metal is the same as the main element of a material comprising the upper electrode;

wherein the barrier metal contacts with the upper electrode in an upper electrode extending area outside of the area where the opposing lower electrode exists;

wherein said main element of the material comprising the upper electrode is selected from a group consisting of ruthenium, platinum and iridium; and

wherein said material comprising the upper electrode includes at least one type of element selected from a group consisting of palladium, titanium, nickel and cobalt.

5. A semiconductor device comprising:

a semiconductor substrate;

a storage capacitor formed on a main surface side of the semiconductor substrate and being provided with a first electrode and a second electrode arranged to have a capacitor insulation film between them;

a wiring conductor formed on the main surface side of the semiconductor substrate and including copper (Cu) as the main element; and

a barrier metal provided so as to contact with a surface of the wiring conductor;

wherein the shortest distance between the semiconductor substrate and the first electrode is shorter than the shortest distance between the semiconductor substrate and the second electrode;

wherein the second electrode extends over an area in which the opposing first electrode exists;

wherein the main element of a material comprising the barrier metal is the same as the main element of a material comprising the second electrode;

wherein the wiring conductor contacts with the second electrode in a second electrode extending area outside of the area where the opposing first electrode exists;

wherein said main element of the material comprising the second electrode is selected from a group consisting of ruthenium, platinum and iridium; and

wherein said material comprising the second electrode includes at least one type of element selected from a group consisting of palladium, titanium, nickel and cobalt.

6. The semiconductor device according to claim 1, therein said main element of the material comprising at least one of the first electrode and the second electrode is ruthenium.

7. The semiconductor device according to claim 3, therein said main element of the material comprising the upper electrode and/or the lower electrode is ruthenium.

8. The semiconductor device according to claim 4, therein said main element of the material comprising the upper electrode is ruthenium.

9. The semiconductor device according to claim 5, therein said main element of the material comprising the second electrode is ruthenium.